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Case Report

Uncommon presentation of ventral hernia with strangulated falciform ligament and small bowel: a case report and its implication

Shuvam C. P. Pati*, Aditya A. Modi, Jitendra N. Senapati

Department of General Surgery, IMS and Sum Hospital, SOA University, Bhubaneswar, Odisha, India

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***Correspondence:**
Dr. Shuvam C. P. Pati,
E-mail: shuvam.pati@gmail.com

ABSTRACT

Ventral hernias containing the falciform ligament are exceedingly rare. Only a limited number of cases describing incisional hernias with falciform ligament involvement have been reported in the literature. We present a case of a strangulated ventral hernia containing the distal portion of the falciform ligament along with a gangrenous segment of the mid-ileum. The patient underwent emergency exploratory laparotomy with resection of the gangrenous ileal segment and excision of the involved falciform ligament, followed by primary end-to-end ileo-ileal anastomosis. This case highlights the diagnostic challenges and surgical considerations associated with this rare entity.

Keywords: Incisional hernia, Falciform, Ventral hernia, Hernia repair, Strangulated hernia

INTRODUCTION

Incisional hernias are a well-recognized complication of open abdominal surgery. However, involvement of the falciform ligament as hernia content is exceptionally uncommon. Falciform ligament hernias, whether internal or associated with abdominal wall defects, represent a rare subset of hernias described only sporadically in the literature.[1,2] Internal herniation through defects in the falciform ligament is rare but increasingly reported, particularly in the context of prior laparoscopic procedures. Due to nonspecific clinical manifestations and limited radiological sensitivity, diagnosis is often made intraoperatively.[3] We report a rare case of strangulated incisional ventral hernia containing both the falciform ligament and a gangrenous segment of small bowel, emphasizing its clinical presentation, operative findings, and surgical management.

CASE REPORT

A 64-year-old female presented with a three-day history of progressively worsening abdominal pain and swelling in the epigastric region. Her symptoms were associated with multiple episodes of nausea, vomiting, and obstipation. Her medical history was significant for hypothyroidism and dilated cardiomyopathy for 13 years. She had previously undergone open epigastric hernia repair.

Clinical examination

On examination, a 6×4 cm tender swelling was noted in the epigastric region with overlying erythema. There were no visible pulsations, peristalsis, or dilated superficial veins. Cough impulse was absent. The swelling was warm to touch and tender on palpation. Bowel sounds were sluggish.

Table 1 shows initial blood investigations.

Radiological findings

Ultrasonography revealed a 3.4 cm defect in the rectus sheath in the supraumbilical region with herniation of omentum and bowel loops. No definite sonographic evidence of strangulation was reported. Leucocytosis supported the clinical suspicion of strangulation.

Table 1: Initial blood investigations.

Blood parameters	Value
Hemoglobin	13.1 g/dl
White blood cell count	13720
Platelet count	279000
Serun creatinine	1.26
Serum sodium level	138
Serum potassium level	4.54

Operative findings

Given the clinical and laboratory findings, emergency exploratory laparotomy was performed via an upper midline incision. Intraoperatively, a 3×2 cm defect in the rectus sheath was identified. The hernia sac contained the distal portion of the falciform ligament and approximately 10 cm of gangrenous ileum located 90 cm proximal to the ileocecal junction (Figures 1 and 2).

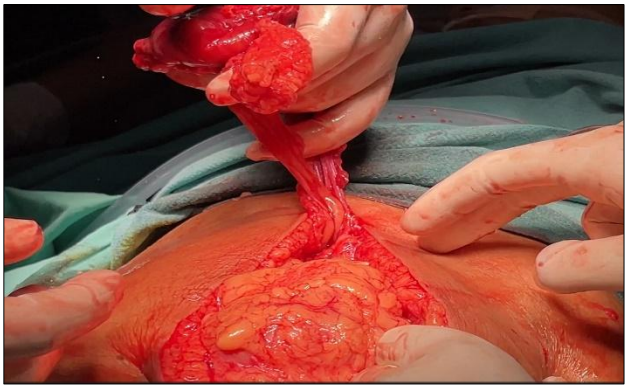

Figure 1: Gangrenous distal part of the falciform ligament with health omentum.

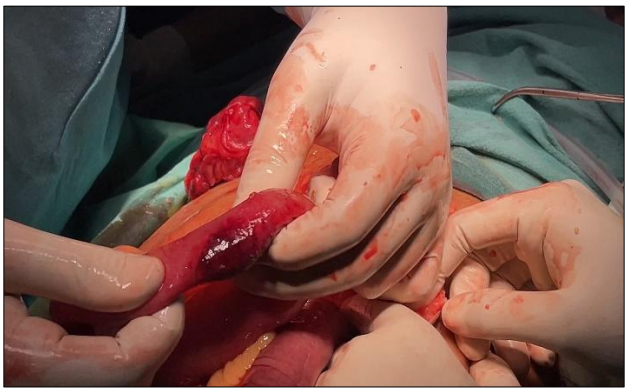

Figure 2: Gangrenous segment of mid-ileum which is approximately 90 cm proximal to the Ileocecal junction.

Resection of the gangrenous ileal segment was performed along with excision of the distal falciform ligament. Bowel continuity was restored using primary end-to-end ileo-ileal anastomosis. Mesh repair was deferred due to contamination risk associated with gangrenous bowel and the potential for postoperative infection. The postoperative course was uneventful, and the patient was discharged on postoperative day seven.

Follow-up

Patient was followed up to the OPD on 30th and 45th postoperative day and patient was healthy and doing day to day activities with no sign of hernia recurrence which was confirmed clinically and radiologically respectively.

DISCUSSION

Incisional hernias are a common consequence of open abdominal surgery with a reported prevalence of 22%, Emergency surgery increases the risk greatly (40-52%) because to the greater possibility of infection.[4] Obesity, male gender, and variables that raise intra-abdominal pressure are all risk factors for hernias.[4,5] While laparoscopic surgery has considerably reduced the frequency of incisional hernias but the patients' age and medical comorbidities still pose the largest risk. The nonspecific clinical manifestations of falciform ligament hernia indicate that radiological findings play a significant role in the therapy of these individuals. Anecdotally, the diagnosis of falciform ligament hernia by radiological evaluation of computed tomography (CT) imaging has been demonstrated with findings such as clusters of small intestines below the diaphragm surrounding the hepatic falciform ligament, as well as dilated ileal loops between the abdominal wall and liver with a point of stricture at the supposed falciform ligament site.[6,7] However, an analysis of 37 cases of falciform ligament hernia published in 2013, indicated that abdominal CT scans were 35.7% sensitive, suggesting that preoperative imaging may not be a strong diagnostic tool for these patients.[8] While falciform ligament hernias are usually caused by congenital abnormalities, an iatrogenic aetiology has also been hypothesized, given the preceding history of laparoscopic procedures in more recent patients.[8] Laparoscopic cholecystectomy and gastric fundoplication have been linked to the development of iatrogenic falciform ligament hernias.[7] Although our patient was not history of post laparoscopic cholecystectomy or gastric fundoplication but she did have a prior history of abdominal procedures, which is known to increase the risk of subsequent abdominal hernias.[9] Thus, prior abdominal wall surgical history should enhance the differential when contemplating falciform ligament hernias; nevertheless, further study is needed to indicate a linked risk between the two. Several risk-reduction measures have been proposed in response to the rising frequency of falciform ligament hernias as laparoscopic surgical approaches become more prevalent. Internal herniation can be avoided by positioning the subxiphoid trocar close to the right of the midline during laparoscopic cholecystectomy.[3] The removal of the subxiphoid port under vision prior to pneumoperitoneum desufflation can reduce the risk of herniation in the postoperative period.[3] If an aperture is produced in the falciform ligament during laparoscopic

surgery, division of the falciform ligament, including the round ligament, may prevent further falciform ligament herniation.[3]

CONCLUSION

Falciform ligament hernia is a rare but clinically significant entity that may present with strangulated small bowel. Preoperative diagnosis remains challenging due to nonspecific clinical and radiological findings. A high index of suspicion is warranted, particularly in patients with prior abdominal surgery. Prompt surgical intervention is essential to prevent morbidity. This case adds to the limited body of literature describing falciform ligament involvement in ventral hernias and highlights important operative considerations.

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